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Emotion and Environment: Visitors' Extraordinary Experiences along the Dalton Highway in Alaska

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To assess how the natural environment and social interaction foster emotional outcomes, this study surveyed recreational visitors to the Dalton Highway in northern Alaska (258 guided visitors, 187 independent travelers) about a special experience they had, the factors that influenced it, and the emotions it engendered. Scenery—especially mountains—was the most commonly mentioned feature, with vastness, contrasts, and colors emerging as important dimensions. Seeing wildlife was important in half of the special experiences, especially when it involved being near animals, watching natural behavior, or seeing young animals. Surprising, novel, or unexpected circumstances were explicitly described by nearly one fifth of respondents. The emotions of awe, excitement, and pleasure were strongly associated with special experiences. Experiences in which wildlife and scenery were experienced either as part of a social group or during a recreational activity generated significantly higher levels of positive affect. These findings emphasize the importance of positive emotions as a benefit of recreational activities and provide insight into the nature of extraordinary experiences.

KEYWORDS: *Tourist experience, affect, wildlife, expectations.*

Introduction

Federal laws direct public land managers to meet the diverse requirements of society, including provision of recreation and other social benefits. As a result, managers need a better understanding of what constitutes high quality experiences and the social-psychological benefits visitors receive. Science has made great progress toward this end, particularly in terms of visitor motivation and satisfaction (Manning, 1999). This study aims to expand understanding of the outcomes of recreation and tourism experiences by focusing specifically on emotional responses. Our goal is to characterize the nature of high quality ("extraordinary") experiences among visitors to the Dalton Highway in Alaska, including the intensity of different emotions they engender, and to understand how aspects of the natural environment and social interaction foster emotional outcomes.

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Dimensions of Experience Quality

Satisfaction and expectation confirmation. Providing high quality experiences is a primary goal of recreation management (Knopf, 1988). Traditionally, resource managers have focused on whether visitors are satisfied with their experience to determine whether they have achieved this mandate (Herrick & McDonald, 1992; Manning, 1999; Whisman & Hollenhorst, 1998). Satisfaction or dissatisfaction is usually conceptualized as a function of whether visitors' expectations are fulfilled or their psychological needs are met (Mannell & Iso-Ahola, 1987). Oliver's (1980) confirmation/disconfirmation model of consumer behavior suggests that people have preconceived goals and expectations, observe the performance of a product or transaction, compare performance with expectations, and form confirmation or disconfirmation evaluations. If expectations are confirmed or exceeded, a cognitive appraisal of satisfaction results; if expectations are negatively disconfirmed, dissatisfaction results (Mano & Oliver, 1993). This framework directs management focus toward understanding visitors' goals and prior expectations so that they can be met (Driver, Brown, Stankey, & Gregoire, 1987).

Although the goal-oriented confirmation/disconfirmation approach clearly has merits, many authors argue that its value may be limited because it restricts the definition of experience quality to cognitive appraisals of expectations or desires and outcomes (Floyd, 1997; Fournier & Mick, 1999; Oliver, 1993). There are two primary problems with the approach: (a) it cannot account for perceptions and feelings that occur during the recreational experience for which a person had no prior expectation or that may have little to do with whether expectations were met, and (b) it does not pay sufficient attention to emotional aspects of experience quality.

Emergent dimensions of experience. Research has shown that experiential outcomes may arise from out-of-the-ordinary events that are not specifically sought by the individual, emerging instead as the recreation experience unfolds (Fredrickson & Anderson, 1999; Williams & Harvey, 2001). In the realm of consumer behavior, work by Oliver (1993) and Mano and Oliver (1993) establishes a direct link between product attribute performance and satisfaction that is independent of the effect of expectation confirmation. In recreation and leisure, too, some have argued that to a large extent the positive and intense nature of high quality experiences may derive from spontaneity and unexpected occurrences (Arnould & Price, 1993).

Emotion. Affective responses, including emotion, are key dimensions of leisure experiences (Lee & Shafer, 2002; McIntyre & Roggenbuck, 1998), and positive emotions are crucial to overall experience quality. For example, Floyd (1997) found that the emotional dimension of pleasure was the most significant indicator of overall satisfaction among hunters. Nevertheless, apart from a few studies, little attention has been devoted to describing the emotions associated with high quality leisure or recreation experiences and understanding the factors that cause them. Although Knopf (1987) made

this point two decades ago, for the most part it still holds today (Lee & Shafer).

Emotions are generally agreed to have evaluative and arousal dimensions (Lambie & Marcel, 2002). Ortony, Clore, and Foss (1987) defined emotions as "internal mental states that are focused primarily on affect" (p. 325). Three assumptions underlie this definition. First, emotion is not an external state but rather an internal mental state. Second, emotions are not cognitive, physiological, or behavioral states; they are affective states of subjective feeling (Lambie & Marcel). Finally, emotions are a result of a specific event or stimulus and are therefore episodic in nature (Feldman Barrett & Russell, 1999; Lee, Shafer, & Kang, 2005). For example, "being lost" is an external state, whereas the internal affective states associated with getting lost (e.g., fear, anger, or anxiety) are emotions. Emotions can be considered a subset of the larger realm of affective states, which include moods and other feelings with hedonic tone (Lambie & Marcel; Russell & Feldman Barrett, 1999).

Affective experiences should be important to recreation managers for several reasons. The manager's charge is to facilitate satisfying experiences, and satisfaction is in part a function of emotion (Mano & Oliver, 1993). Beyond this, though, positive emotion conveys individual benefits for physical and mental health. Overall feelings of positive or negative affect in one's life are significant predictors of subjective well-being (Weiss, 2002). Because recreation and leisure typically generate positive affect, they contribute to overall well-being (Floyd, 1997; Hull, Michael, Walker, & Roggenbuck, 1996; Kerr, Fujiyama, & Campano, 2002). Indeed, Ulrich (1983) has argued that emotional experiences are among the most important benefits realized by many recreationists in the natural environment. Hull (1990) concluded that moods experienced on-site had later effects on self image, performance, and pro-social behavior. He suggested that moods could potentially be one of the most "socially relevant products" that recreation has to offer.

Extraordinary Experiences

Among the most beneficial and emotionally charged experiences are those described in the literature as "extraordinary" (Arnould & Price, 1993) or "transcendent" (Williams & Harvey, 2001). Such experiences are associated with strong positive emotions (high pleasure and arousal) and are transitory or rare (Laski, 1962). In their study of whitewater rafting, Arnould and Price identified three factors common to extraordinary experiences, all of which had a strong influence on overall trip satisfaction. First, people experienced communion with nature that involved both escape from obligations and an emotional bond brought on by immersion in places of uncommon natural beauty. Second, extraordinary experiences involved a feeling of connection and group identity—"communitas"—with friends, family, and strangers. Third, people reported personal growth, the renewal of self, and adventure. That study and others (McIntyre & Roggenbuck, 1998; Williams & Harvey) affirm that extraordinary experiences involve intense emotions and that multiple factors converge to shape them.

Williams and Harvey (2001) described several types of extraordinary experiences in forest environments, with a focus on the cognitive dimensions of fascination, novelty, and transcendence, as well as how specific environments affected these cognitions. Some of these seem similar to "peak" experience, defined as "an intense and highly valued moment" (Privette, 1983, p. 1361). There is also similarity to flow experience, which involves a loss of self-awareness, concentration on activity, a balance of challenge and skill, and enjoyment (Havitz & Mannell, 2005). While studies of peak and flow experiences have explored people's physical states, focus of attention, and performance, there have been no in-depth studies of emotion in the context of extraordinary experiences, even though emotionality is a key distinguishing feature of such experiences.

Given the generally positive associations of peak and flow experiences, we expected high quality experiences to elicit high levels of positive affect, particularly pleasure. Whether emotions associated with arousal would occur was unclear, as Williams and Harvey (2001) and Frederickson and Anderson (1999) did not always report high levels of arousal. We further sought to identify the factors in the natural and social setting that created these high quality experiences.

Influences on Emotion during Leisure Experiences

A review of literature identified four categories of stimuli that should contribute to the occurrence of high quality leisure experiences and elicit emotional responses in natural settings: scenery, recreational activity, wildlife, and social interaction.

Scenery. Natural environments are almost universally preferred in studies of scenic beauty and environmental preference (Korpela, Klemettila, & Heitanen, 2002). Aesthetic aspects of the natural environment, particularly visual appearance, have been shown to arouse emotion and positive feelings (Hull & Michael, 1995). Vegetation, water bodies, and moderate visual complexity engage attention, lead to cognitive restoration, and generate positive emotions (Hartig, Evans, Jamner, Davis, & Gaerling, 2003). Fredrickson and Anderson (1999) found that participants on wilderness trips attributed their positive responses largely to the natural environment, although they often mentioned aspects beyond just visual appearance. Recent experiments have demonstrated that being in natural environments, as opposed to urban settings, leads to significantly more positive emotion and reduction in negative emotionality (Hartig et al.). Therefore we expected people to describe scenic aspects of the natural environment as important to their high quality experiences and for these to arouse positive emotion.

Recreational activity. Leisure—being a voluntary pursuit—is generally associated with positive affect (Havitz & Mannell, 2005; Mannell, Zuzanek, & Larson, 1988). During multi-day wilderness trips, participants described feeling some fear, but largely joy, contentment, and exhilaration (Fredrickson & Anderson, 1999). Different recreational activities will generate different affective outcomes, often varying on the dimension of arousal (Hull,

1990). There is some evidence that moderately intense activities are most likely to generate positive moods (Wankel & Berger, 1991). In Tarrant, Manfredo, and Driver's (1994) evaluation of psychophysiological responses to active and passive recreation, people recalling active pursuits exhibited stronger and more positive affective responses. However, Williams and Harvey (2001) challenged the assumption that active recreation is necessary for positive emotion during extraordinary experiences; instead the majority of their respondents attributed their special experiences to qualities of the natural environment regardless of their recreational activity. Given the mixed findings in the literature, we had no firm prediction about how important specific recreational activities would be to extraordinary experiences.

Wildlife. There is substantial evidence that wildlife encounters elicit emotional and other affective responses from humans (Kellert, 1980, 1996). For instance, Myers, Saunders, and Birjulin (2004) found that zoo animals aroused feelings of respect and wonder, and some species generated strong feelings of love and attraction. The women in Fredrickson and Anderson's (1999) study described encounters with wildlife as exhilarating. Patterson, Watson, Williams, and Roggenbuck (1998) reported that the most frequent "nature story" told by wilderness canoeists involved interactions with wildlife. We expected wildlife to feature prominently in people's extraordinary experiences along the Dalton Highway.

Social interaction. The importance of social interaction varies for different people and in different contexts. Social interaction was critical to the "inspirational" experiences of many women on multi-day canoeing and backpacking trips (Fredrickson & Anderson, 1999), and rafters in Arnould and Price's (1993) study cited interaction with others as one of the best aspects of their trip. Social interaction has significant impacts on the emotion and mood experienced during leisure (Hull, 1990). The particular emotions evoked vary depending on the nature of the interaction and the particular people involved (Mannell & Iso-Ahola, 1987). Based on the literature, we expected that high quality experiences would be most likely to involve interactions with family (Orthoner & Mancini, 1991).

These four categories of factors (scenery, recreation, wildlife, and social interaction) were expected to be associated with high quality experiences and positive emotion, although we did not have expectations about which would be most prevalent or in what combinations they would be described. In addition, given the emphasis on novelty and the unexpected in studies of extraordinary experiences, we anticipated that high quality, emotionally charged experiences would often be associated with unexpected events (Arnould & Price, 1993; Williams & Harvey, 2001). This seemed especially likely in northern Alaska, where the environment and wildlife are unlike any that most people have seen.

Purpose of the Study

This study sought (a) to understand the nature of high quality experiences during a tourist or recreational engagement, (b) to identify the factors

that contribute to those experiences, and (c) to describe the type and intensity of emotional responses produced by special experiences.

Methods

We generated qualitative and quantitative data through self-administered questionnaires completed by Dalton Highway visitors. Content analysis of qualitative responses informed us about the nature of and contributors to extraordinary experiences. Examination of quantitative data on emotions allowed us to compare the extent to which different factors (scenery, wildlife, activity, and social interaction) elicited different emotions.

Study Area and Population

In the mid-1970's, after the discovery of oil on Alaska's North Slope, a utility corridor was delineated north of Fairbanks to the Prudhoe Bay oilfields paralleling a portion of the 800-mile pipeline. In 1991 the State of Alaska opened the 414-mile gravel road to public travel as the Dalton Highway. The highway traverses Alaska's sub-Arctic and Arctic ecosystems, passing through alpine tundra, boreal forest, the Brooks Range, and the North Slope. The interagency Coldfoot Visitor Center, where we contacted visitors, is located 61 miles north of the Arctic Circle, midway between Fairbanks and Prudhoe Bay. Most visitors stop for fuel or information, because it is the last opportunity for 239 miles, which made it a suitable sampling location.

Two types of visitors travel the Dalton Highway: independent travelers and commercially guided tour groups. Our study included people who had traveled the entire length of the Highway. While tour groups travel the whole route, many visitors traveling independently turn around at the Arctic Circle, and these people are not included in our sample. Most guided tours stay overnight in Coldfoot with a stop at the visitor center. Visitors on guided tours going north from Fairbanks fly back from Prudhoe Bay and are replaced by visitors driving south to Fairbanks. In 2002, people on guided tours represented 26% of the visitors to the Coldfoot Visitor Center (Jodwalis, 2002).

Data Collection

Data were collected via written questionnaires completed after visitors had traveled the length of the Dalton Highway. Visitors to the Coldfoot Visitor Center, age 18 and older, were approached by an employee of the Visitor Center. Because visitation is quite low, the researcher attempted to contact every visitor possible on 51 sample days between June 2 and August 7, 2002, in order to obtain a target of 400 completed questionnaires. Although an effort was made to approach all visitors on dates selected for surveying, some were not contacted when the researcher was occupied with other visitors or engaged in other duties. This potential limitation of our investigation is discussed later.

People who were returning south after having been north completed the questionnaire at the Visitor Center. People arriving from the south who were continuing northward were asked to take the questionnaire and return it when they completed their visit. Guided tourists who traveled the Dalton Highway in only one direction were asked to take and complete the questionnaire and give it to their guides, who then returned questionnaires to the visitor center on their return trip.

Measures

Emotional responses are complex phenomena that at present cannot be comprehensively understood solely via structured surveys with closed response options (Fredrickson & Anderson, 1999; Shaver, Schwartz, Kirson, & O'Connor, 1987). To gain a more holistic understanding, both closed and open-ended questions were asked.

Special experience. Similar to the question used by Grandey, Tam, and Brauburger (2002), who asked for written descriptions of "any event" that made participants "feel strongly," we asked participants to describe "one very special experience" during their current visit to the Dalton Highway in as much detail as possible. Woods and Moscardo (2003) contend that this type of "critical incident" elicitation is particularly effective, because people tend to have good recall of both feelings and factors that contribute to the experience. We used the word "special" rather than "extraordinary" to sound more natural to respondents and to avoid cuing them to mention unexpected or novel events. In their study of transcendent experiences, Williams and Harvey (2001) asked people to describe either an experience of awe, joy, serenity, or "a most wonderful experience" in a forest, and the particular phrasing did not affect the type of responses they obtained.

Respondents described, in their own words, the nature of their experience. A full page was provided for this response, and the question appeared near the beginning of the questionnaire booklet. Visitors could indicate that they had not had a very special experience, and these respondents skipped to other questions that are not included as part of this study.

Influencing factors. The four potential influences on special experiences—wildlife, scenery, recreational activity, and social interaction—were each measured with a single variable. Questions asked respondents how important each was to the special experience they had described (1 = not at all important, 5 = extremely important). A similar question asked people to indicate the extent to which the experience involved "something unexpected," to determine how often novelty contributed to the experience.

Emotion. Researchers have debated which feelings are the best examples of emotions, although most agree that there is a limited core set. The emotions used in this study were selected from Shaver et al.'s (1987) prototype approach: awe, sadness, pleasure, aggravation, excitement, anxiety, contentment, boredom, surprise, disappointment, love, anger, joy, fear, and affection. We included negative emotions because research has shown that

positive and negative affect are independent (Zelenski & Larsen, 2000), and others have reported a mix of emotions during recreational experiences (Fredrickson & Anderson, 1999; McIntyre & Roggenbuck, 1998). The questionnaire asked people to consider the special experience they had described and indicate the degree to which they had experienced each of the 15 emotions using 5-point scales.

Visitor characteristics. To characterize visitors, the questionnaire asked about the size of respondents' traveling group, their age, and their gender. They also indicated whether they were part of an organized tour or traveling independently.

Analysis

Open-ended narratives about extraordinary experiences were coded using QSR N*Vivo. Several close readings of descriptions yielded a list of themes and sub-themes. The higher level "trees" (codes) began with the four factors that were expected to elicit extraordinary experiences (scenery, activity, wildlife, and social interaction), as well as a code for novel or unexpected elements. Within each of these, codes were developed to capture subtle nuances of meaning. Emotions were also coded, using the 15 categories provided by Shaver et al. (1987) but also including other affective states. Influences on special experiences were adequately captured through sub-themes of the initial trees, but we found it necessary to develop additional trees for affective and cognitive dimensions that were not fully covered by the codes for emotions. Inter-rater reliability evaluation performed on a randomly selected sub-set of 50 narratives generated 91% agreement.

Quantitative emotion measures were subjected to factor analysis to determine whether they were measuring different underlying latent dimensions. Varimax rotation was used, and items were retained if their loadings were at least 0.40 on at least one factor (Floyd, 1997). Factors with eigenvalues greater than 1.0 were retained. To isolate the effect of different setting factors on emotional responses, visitors were grouped according to their responses about the importance of the four setting factors to their extraordinary experiences. ANOVAs were performed to understand how the emotional "profile" differed across these categories.

Results

Sample Characteristics

In 2002, 4,706 people stopped at Coldfoot Visitor Center, and 611 adults (13%) were asked to participate in the study. Given requirements of the setting that often mandated distribution of surveys for later return and an inability to make follow-up contacts, the response rate was higher than expected: 448 people (72.8%) returned completed questionnaires. Of these, 187 were from independent travelers (71.9% response rate) and 258 were from guided visitors (73.5% response). Three individuals were not identified

as either guided or independent travelers. The two groups differed significantly ($\alpha = .05$) in several ways. Guided visitors had more people in their immediate personal group ($M = 4.2$, $SD = 5.14$) than independent travelers ($M = 3.2$, $SD = 3.45$). They also were somewhat older ($M = 55.5$, $SD = 12.8$) than independent travelers ($M = 43.9$, $SD = 15.5$). Women made up a larger percentage of tour group respondents (61%) than of independent travelers (42%).

Extraordinary Experiences

Nearly all visitors (89.4% of guided visitors and 95.6% of independent travelers) described a "very special experience" that occurred during their visit. Narrative descriptions ranged from one or two sentences to more than 200 words. Despite instructions to focus on one event, nearly half of the respondents described either more than one special experience or said that the whole experience was special. For example, one said, "although I cannot mention one specific event, setting, or view that I could label a 'special experience,' I can say that our entire drive, which included two overnights at the Yukon Crossing, was special indeed."

Influences—qualitative evidence. Descriptions of extraordinary experiences were examined for references to the four factors we expected to find as well as novelty. All five were important, but wildlife and scenery outweighed social interaction, recreational activities, and novelty in terms of prevalence (Table 1). In some cases, people briefly described a feature without detail, and these were coded as "no elaboration." However, in the more detailed descriptions, common aspects emerged that made experiences special, as explained below.

For scenery, a wide range of aspects contributed to extraordinary experiences, with considerable diversity across respondents. Mountains were most often mentioned, typically in general terms (e.g., "the Brooks Range" or "snowy peaks"). For example, a 22-year-old woman from a tour group wrote, "one of the most special experiences for me was driving through the Brooks Range. I have never seen anywhere so beautiful. The feeling I had was really hard to describe but definitely powerful. All the mountains were truly amazing." The tundra and water bodies—particularly the Arctic Ocean—were mentioned somewhat less often than mountains.

Seventy-six people mentioned scenic elements that could be considered ephemeral: weather, the midnight sun, colors, light, clouds, contrasts, or the changing variety of sights. Weather encompassed various events, especially snow, rain, clouds, and rainbows: "the view was breathtaking—like one could see forever and what made it an even better day was seeing some low dark clouds in the mix with rain obviously being dumped from some of the clouds" (66-year-old guided visitor). People occasionally commented on subtle details of the environment, for example: "I had expected the greens, grays, and browns of northern tundra and mountains but not the color of the grasses and the fireweed along the lower part of the highway. . . the rose,

TABLE 1
Prevalence of Factors Hypothesized to Contribute to Special Experiences

Theme	Sub-themes	Number of mentions	Percent within theme
Viewing scenery	Scenery (no elaboration)	17	7.7
(n = 220 people, 54%)	Mountains	96	43.6
	Tundra	51	23.2
	Bodies of water	42	19.1
	Flora	36	16.4
	Variety in landscape	31	14.1
	Vistas/panoramic views	30	13.6
	Vastness of landscape	28	12.7
	Weather events	28	12.7
	Climactic phenomena	23	10.5
	Pipeline/oilfields	18	8.2
	Colors in the environment	13	5.9
	Valleys	10	4.5
Viewing wildlife	Wildlife (no elaboration)	51	24.6
(n = 207 people, 50%)	Wildlife + Scenery (no elaboration)	27	13.0
	Proximity to animals	61	29.4
	Observing animals' behavior	59	28.5
	Seeing baby animals	37	17.9
	Number of animals seen	24	11.6
	Amount of time spent watching	23	11.1
	Animals seen in natural habitat	22	10.6
	Diversity of species seen	19	9.2
Recreational activity	Walk, hike	32	27.8
(n = 117 people, 29%)	Visiting settlements	23	20.0
	Photography	20	17.3
	Swimming, wading	15	13.0
	Dalton Highway itself/driving	13	11.3
	Camping	13	11.3
	Oilfields/tours	8	6.8
	Eating	7	6.1
	Other	15	13.0
Social Interaction	Local residents	32	43.8
(n = 73 people, 18%)	Family/friends	21	28.8
	Other visitors on Highway	10	13.7
	Tour guide	13	17.8
Novelty	Uniqueness of experience or feeling	33	38.4
(n = 86 people, 21%)	Novel scenery	26	30.2
	Novel wildlife	24	27.9
	Unexpected experiences	13	15.1

orange, red, purple of the fireweed and the graceful movement of the long seeded grasses in the wind, almost moving as waves in the ocean, was breathtaking" (64-year-old woman, independent traveler). A 24-year-old man on a tour wrote about "lying in the tundra, feeling the clouds on top of the world; the sun never setting; bees and flowers dancing at 3:00 in the morning; looking at the ground for hours; getting wet and freezing; lying below the wind; the overwhelming awe and enchantment."

Viewing wildlife was special when it involved seeing animals for a long time, at close range, acting naturally in a natural habitat, or with young. For instance, a 62-year-old woman on a tour wrote, "while traveling from Coldfoot to Prudhoe Bay by bus I spotted a wolf on the side of the highway. The body language—his stance and the sit of his head—showed me a timidness. . . I saw a wild animal, not just feeding or wandering, but being more characteristic of his species. Upon being disturbed by the passing vehicles, he turned slowly and calmly walked behind the brush and trees." Another person, a 52-year-old independent traveler, wrote that she "watched and camped across the road from a caribou carcass with sea gulls on it and waited. Nothing in the morning. On preparing to leave, I looked up and saw a beautiful happy bounding wolverine! We spent two days watching him take food away from the carcass and stash it away. He carried away the whole head—no antlers though. Wow it was cool."

A minority of visitors participated in outdoor recreational activities aside from driving and sightseeing. For instance, only 6% reported backpacking, 28% reported hiking, and 34% reported camping at any time during their trip. Nevertheless, 117 people specifically mentioned recreational or tourist activities as part of their special experience. Visiting settlements was a notable and unexpectedly important event for some people. Relatively few special experiences involved a physically active outdoor recreation activity like camping or fishing, although walking and hiking (particularly on tundra) were described by several people.

Social interaction was important for 18% of respondents who had special experiences. As expected, friends and family were quite important. A 62-year-old woman on a guided tour said, "This trip is one I have dreamed of since my parents visited Alaska 25 years ago. Since my sister and I had the same dream, I waited until she could afford to go so we could do this trip together and report back to our dad who will be 89 in September. Sharing the majesty of the mountains and the vastness of this area of its beauty with a loved one really makes it special and worth waiting for." Unexpectedly, interaction with locals made a strong impression on some visitors: "We had the opportunity to visit Wiseman and Jack the 'trapper.' Jack provided a first-hand view of what it is like to live in the wilderness at subsistence level. Jack was someone we could relate to, not what our perceptions of one living off the land might normally be. He was smart, accommodating, and informative. His depiction of his strategic battle with wolves will stick in our minds for quite some time" (59-year-old male guided visitor).

Novel occurrences were explicitly reported by more than one fifth of respondents. These people indicated in their narratives that something new, unique, or unexpected gave rise to their extraordinary experience. Often the references were to wildlife or scenery. A 58-year-old man on a tour wrote that "the different perspectives visible from the road and the play of the light (and clouds etc.) made for new and often surprising images and kept my interest piqued throughout the entire ride. While perhaps not a spiritual one, the impact was inspiring, gleeful, exciting, and joyful." However, sometimes what was new or unique was the type of feeling experienced: "while traveling on this remote highway I felt as if I were back in the time when the first explorers came through here—the unspoiled beauty of having seen it for the first time. How peaceful and out of touch with civilization they must have felt. What a unique experience captured only in this part of the country" (57-year-old woman, guided tour).

Influences—quantitative evidence. The conclusions about influences on extraordinary experiences drawn from the qualitative analysis were triangulated through analysis of forced-choice questions on the survey instrument. Viewing scenery ($M = 4.47$, $SD = 0.78$) and wildlife ($M = 4.22$; $SD = 1.10$) contributed more strongly to extraordinary experiences than novelty ($M = 3.41$, $SD = 1.34$), social interaction ($M = 3.62$, $SD = 1.24$), and participating in a recreational activity ($M = 3.21$, $SD = 1.39$).

Cognitive Dimensions of Special Experiences

People's narratives of their experiences sometimes included elements not adequately described as emotions or other affective states. These fell into three broad categories: expectations/goals, cognitions about oneself, and cognitions about the environment (Table 2). Fifty-eight people (14%) wrote descriptions in which they explicitly mentioned goals for the trip or prior expectations, with half of these saying that the experience was the fulfillment of a dream or accomplishment of a personal goal. A few people said that the trip exceeded their expectations, and about the same number mentioned expectations that were not met. Twelve people described how the actual trip compared to knowledge they had gained through reading or investigating the Arctic prior to their visit.

Almost half of all narratives involved thoughts or reflections we called "internal," indicating non-emotional, reflective cognitions. Many of these involved satisfying a personal interest in or learning about human uses, settlement, or natural history. A few people described feelings or thoughts typically associated with wildland experiences, such as freedom, challenge, or spirituality. Some people described how their experiences caused them to reflect on how the Arctic is preserved or to recognize the ways human uses and environmental protection are balanced.

Finally, 12% of people mentioned non-emotional subjective assessments of qualities of the external environment. The majority of these were refer-

TABLE 2
Prevalence of Emergent Themes in Special Experiences

Theme	Sub-themes	Number of mentions	Percent within theme
Prior Expectations	Fulfill dream/accomplish goal	26	44.8
(n = 58, 14%)	Exceeded expectations	12	20.7
	Failed expectations	12	20.7
	Prior knowledge	12	20.7
Internal cognitions	Interest/learning human history	26	13.6
(n = 191, 47%)	Interest/learning natural history	37	19.4
	Involvement of senses	22	11.5
	Reaching a milestone (e.g., Arctic Circle)	19	9.9
	Inspiration/impressed	17	8.9
	Nostalgia/imagination	15	7.9
	Preservation of environment	12	6.3
	Balance of human uses	9	4.7
	Freedom	9	4.7
	Spiritual thoughts	9	4.7
	Personal memories/reminiscence	9	4.7
	Challenge/adventure	6	3.1
	Fascination	6	3.1
	One with nature	4	2.1
External Environment	Pristine, wild, unimpacted	26	51.0
(n = 51, 12%)	Uninhabited, remote	20	39.2
	Solitude/isolation	10	19.6
	Harsh/rugged landscape	10	19.6
	Vastness/expansiveness	8	15.7
	Other	8	15.7

ences to the wilderness and lack of human influence, or the related feelings of remoteness or isolation.

Emotions

Qualitative evidence. Descriptions of extraordinary experiences generated 305 responses that we characterized as emotional or other affective responses from 211 respondents (Table 3). Not surprisingly, pleasure or enjoyment was described in 32% of descriptions. Most other special experiences appeared to be pleasurable, but were instances where people did not explicitly describe such feelings. Approximately 26% of emotional reactions involved awe. For instance, a 56-year-old woman on a tour wrote, "the only way to describe the feeling of stepping foot into the Arctic Ocean was one of exhilaration and awe. To me, just to know that you've reached an area at the top of the world was simply breath-taking." Another tour group member, a 45-year-old man, said, "perhaps best. . .was seeing musk oxen on the Sag

TABLE 3
Affective Descriptors of Special Experiences from Visitor Narratives

Theme	Sub-themes	Number of mentions	Percent within theme
Emotions and affective states (n=211, 51%)	Pleasure/happiness/enjoyment	67	31.8
	Awe/amazement	55	26.1
	Excitement/thrill/exhilaration	28	13.3
	Appreciation/sense of privilege	26	12.3
	Breath-taking/spectacular	19	9.0
	Surprise	16	7.6
	Peace/quiet/serenity	12	5.7
	Overwhelming/moved to tears	12	5.7
	Humility	8	3.8
	Fear/anxiety	7	3.3
	Love	7	3.3
	Disappointment	6	2.0
	Accomplishment/pride	6	2.0
	Privilege	6	3.1
	Sadness/regret	5	2.4
	Unable to describe	4	1.9
	Other	18	8.5

River by Pump Three. Seeing them was awesome, primal—truly a moment of wilderness in the beauty of Alaska. Words don't do an adequate job—it was inspiring." A 60-year-old woman wrote, "my special experience was the Brooks Mountain Range and Atigun Pass—beauty beyond imagination, magnified landscape which changed in every different direction. Overwhelmed with the awesome majesty of this incredible section of Alaska—a 'lifetime' experience—I'll remember all my life and it really affected me on a deeper level than I thought it would." Very few people mentioned negative emotions such as disappointment or sadness.

Emotions associated with specific setting factors. After participants completed the open-ended question about their extraordinary experience and rated the five influences, they indicated how strongly they had felt each of 15 emotions during their special experience (Table 4). Not surprisingly, positive emotions such as pleasure and contentment emerged as strongly felt. However, the active positive emotions of awe and excitement ranked first and third in intensity.

Factor analysis generated four latent emotion factors. Boredom did not load highly on any of the factors and was therefore eliminated from analysis. Inspection of results for this item showed, as might be expected, very low levels of boredom and little variability. Anxiety and pleasure both loaded highly on two factors. In computing indices for each factor, these items were grouped with the factor to which they belonged conceptually according to

TABLE 4
Loadings from Factor Analysis and Item Means for Emotion Measures

Emotion	Factor 1 "Positive"	Factor 2 "Anger"	Factor 3 "Excitement"	Factor 4 "Fear"	*M*	*SD*
Pleasure	**.51**	−.14	.54	−.04	4.16	0.79
Contentment	**.65**	−.11	.32	.04	3.62	1.14
Joy	**.73**	−.03	.38	.07	3.76	1.15
Love	**.85**	.09	.08	.05	2.76	1.50
Affection	**.85**	.12	.07	.01	2.96	1.42
Sadness	.05	**.73**	.05	−.15	1.37	0.86
Anger	.03	**.81**	.05	.18	1.15	0.58
Aggravation	.10	**.81**	.03	.24	1.32	0.79
Disappointment	−.11	**.63**	−.09	.12	1.24	0.64
Awe	.31	.07	**.67**	−.11	4.21	0.96
Excitement	.35	.00	**.72**	.17	4.15	0.92
Surprise	.01	.03	**.74**	.07	3.60	1.17
Anxiety	.02	.51	−.00	**.67**	1.52	0.95
Fear	.08	.08	.11	**.86**	1.29	0.75
Eigenvalue	4.04	2.88	1.09	1.05		
Cronbach's α	.84	.72	.65	.62		
Factor *M*	3.49	1.30	4.00	1.43		
Factor *SD*	0.94	0.57	0.80	0.77		

Note: Scale 1 = not at all felt; 5 = intensely felt.

Shaver et al.'s (1987) prototype classifications. Cronbach's alphas (all > .60) indicated acceptable levels of reliability given the small number of items per subscale.

To understand how setting elements (wildlife, scenery, activity, and social interaction) affected emotions, we categorized people according to the elements they indicated as contributing strongly (4 or 5 on the 5-point scale) to their extraordinary experience. Novelty was not included because we wanted to isolate the effects of setting factors, and novelty could be associated with any of the other four factors. Because participants could mark any or all of the four factors as important contributors, this generated 15 combinations of responses, of which five had more than 20 respondents. Eighty-three percent of respondents fell into one of these categories, with the largest number of people (n = 118) falling in the *All Four Factors* group.

Scores on the emotion factors were contrasted for the five groups (Figure 1). Levels of anger did not vary across influences, $F(4,323) = 1.67$, $p = 0.16$. Similarly, fear did not differ significantly, $F(4,322) = 2.09$, $p = 0.08$. However, the active emotions associated with excitement varied with influencing factors, $F(4,333) = 8.39$, $p < .0005$. Post hoc Scheffe tests showed that excitement was lower among those in the *Scenery Only* category than in all other categories except *Wildlife+Scenery*. The difference between the

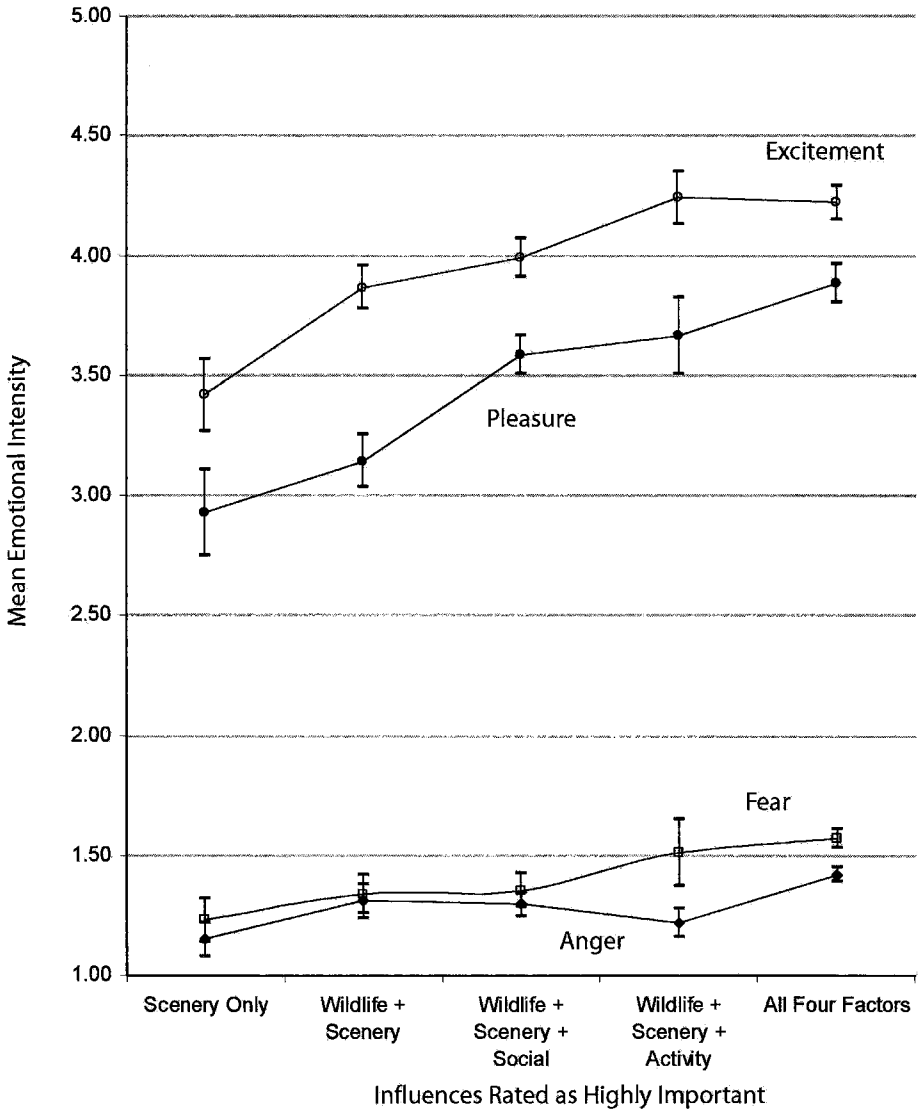

Figure 1. Mean intensity of emotion as a function of influencing factors.

groups with the highest and lowest means was approximately 1.0, or a 20% difference on the 5-point scale. General positive emotions also differed across groups, $F(4, 329) = 11.85$, $p < .0005$, with people in the *Scenery Only* category scoring significantly lower than those in all other categories except *Wildlife + Scenery*. Additionally, people in the *All Four Factors* group had significantly higher scores than either the *Scenery Only* or *Wildlife+Scenery* groups. The

differences between the highest and lowest scoring groups was 0.8 on the 5-point scale, or a 16% difference.

Discussion

The Nature of Special Experiences

Nearly all respondents described a special experience, and almost half reported such experiences on multiple occasions. Emotionality distinguishes extraordinary experiences from other experiences like flow or peak experience (Arnould & Price, 1993), yet there have been few studies directed at emotion during extraordinary experiences. As described in psychological studies of emotion (e.g., Feldman Barrett & Russell, 1999), emotional episodes are complex events, involving objects of attention, appraisal, and phenomenological experiences. More than 90% of Dalton Highway visitors' experiences resulted from a combination of setting factors, half involved non-affective cognitions, and virtually all were associated with at least one strong emotion. Experiences in which wildlife and scenery were experienced either as part of a social group or during an active recreational pursuit generated significantly higher levels of positive affect.

Zelenski and Larsen (2000) point out that "most lists of basic emotions include only one positive emotion, yet there seem to be experiential differences between positive emotions" (p. 195). In our review of literature, we noted that many studies of positive experiences like flow attend to cognitive processes like concentration and focus of attention, but treat emotion narrowly as pleasure or enjoyment (Havitz & Mannell, 2005; Mannell et al., 1988). In our study, quantitative measures revealed that positive affect had two independent dimensions: pleasantness and arousal. This conforms with much of the psychological research on emotion and was similar to emotional dimensions reported by McIntyre and Roggenbuck (1998). Qualitative data demonstrated the subtle nuances and combinations of emotional outcomes. Such findings should encourage exploration of more dimensions of emotion and other affective responses to leisure and recreational engagements.

It is useful to consider our findings about emotional intensity in the context of other studies. Perhaps the most directly comparable measurements were made by McIntyre and Roggenbuck (1998), who had participants complete emotion measures at five times during a float trip on an underground river that involved jumping over a waterfall and floating through caverns of glow-worms. Positive emotionality (happiness, cheerfulness, and excitement) had a mean intensity of 6.1 on a 7-point scale. Emotions associated with arousal (alertness, energy, activeness) also were intense (M = 5.5). The emotion levels we observed (all greater that 4.0 on a 5-point scale) are on par with their findings.

By contrast, several studies of emotion show very low levels of affect during normal daily routines. For instance, Fisher (2002) had people report 16 feelings five times per day for ten days while at work. The mean, on a scale from 1 to 5, was 2.9 for positive affect and 1.3 for negative affect. Zelenski and Larsen (2000) reported that the most intensely felt emotions

momentarily sampled across a 30-day period were happiness (M = 2.9 on a 7-point scale) and relaxation (M = 2.6). In another study, Thomas and Diener (1990) measured nine mood states four times a day for three weeks. On 6-point scales, positive affect averaged 2.2 and negative affect averaged 1.8. These studies provide context against which the high levels of positive affect during special leisure experiences stand out in sharp contrast. Because positive affect is associated with improved subjective well-being (Weiss, 2002), these findings should provide encouragement to recreation managers about the social benefits provided by at least some types of leisure and recreation settings.

Contributors to Special Experiences

Scenery. Within natural settings, people consistently prefer those with optimal levels of coherence and complexity, that provide vistas and that contain water (Chhetri, Arrowsmith, & Jackson, 2004; Ulrich, Simonds, Lositio, Fiorito, Miles, & Zelson, 1991). Half of the participants in our study described natural scenery in their descriptions of special experiences and these scenes often involved spectacular views and open spaces. However, there was considerable variation: although 22% mentioned mountains, no other type of setting was described by more than about 15% of respondents. Like Arnould and Price (1993), we would describe the specific elements that comprise someone's special experience as rather individualized. Additionally, our findings suggest that ephemeral aspects such as color, contrast, and even weather events influence the types of experiences people consider special. Studies that use static images to understand preferences and reactions to the environment may have overlooked these factors, accounting for the lack of discussion of them in the literature.

Wildlife. Wildlife was mentioned in the narratives of 50% of study participants. In a study structurally quite similar to ours, Woods and Moscardo (2003) described the factors mentioned in people's descriptions of their "best" wildlife encounters. The list of factors is virtually identical to the themes we found: being in close proximity to large or rare animals in natural habitats; seeing a variety of animals; high levels of animal activity, especially in response to people; and unexpected, surprising, or new experiences. Chapman (2003), too, found that memorable wildlife encounters involved being close to animals, feeling intimacy—for example through eye contact—and surprise or novelty. Myers et al.'s (2004) study in a zoo demonstrated subtle differences in emotional reactions to different species, but when people felt they had made some individual connection with the animal, emotions were always more positive. Together, this set of studies suggests that, while seeing wildlife is special in and of itself, opportunities to be close to animals and observe natural behaviors are extra special.

Recreational activity. McIntyre and Roggenbuck (1998) documented substantial variation in emotion depending on the specific activity within a river trip. Most Dalton Highways visitors spend most of their time in a vehicle, making this study quite different from others, and we found that ex-

traordinary experiences most often did not involve physically active outdoor recreation activities. Nevertheless, emotional intensity was high regardless of activity. This leads us to conclude that, while the specific type of emotion may vary systematically with activity, strong positive emotions can occur with any activity. Even so, among the people who engaged in activities outside their vehicles in natural areas—walking on the tundra, hiking, swimming, or camping—those activities featured prominently in the special experiences.

Social interaction. Some studies of special experiences find social interaction to be integral in shaping experience quality (e.g., Arnould & Price, 1993; Fredrickson & Anderson, 1999). We did not find many mentions of social interaction, although for a few individuals closeness to family was extremely important, and others mentioned interactions with local residents as inspiring or unexpectedly interesting. In considering the differences between our study and others, it became apparent that the nature and importance of the social group probably varies with the type and length of trip studied. Two of the major studies of extraordinary experiences (Arnould & Price; Fredrickson & Anderson) involved multi-day wilderness trips during which participants were explicitly challenged to test themselves and function as a group. Along the Dalton Highway, this type of situation would be quite atypical. It appears that social bonding is not always required for intense, high quality experiences.

Novelty. Satisfaction theory posits that the cognitive appraisal of expectation fulfillment results in satisfaction or dissatisfaction (Mano & Oliver, 1993). This perspective has been criticized as overlooking other important determinants of satisfaction that may be independent of expectations. The types of experiences visitors in our study found to be most special often had little to do with specific expectations. The few expectations that were explicitly mentioned typically related to viewing wildlife or fulfilling a life-long dream such as wading in the Arctic Ocean. Aside from these cases, many respondents mentioned that it was the unexpected, the unique, or the unpredictable that delivered a special experience. This finding is consistent with Arnould and Price's (1993) depiction of extraordinary experiences. We conclude, therefore, that if studies of satisfaction or experience quality emphasize only expectations, they may be overlooking an important dimension.

Study Limitations

Leisure experiences have been studied in a variety of ways. Some use experience sampling methods to describe the temporal variation in experience (e.g., Borrie & Roggenbuck, 2001). Others have used retrospective recall (e.g., Tarrant et al., 1994). Our study is of the second type, and is subject to criticisms of reliance on recall. Emotions vary across time and events, and it is debated how well people can recall their prior affective states. Barrett (1997) had people report emotions three times a day for 90 days and then recall their typical feelings. The correlations between recall and average momentary experiences were large. However, Thomas and Diener (1990) used

a similar design for reporting over a three-week period, and they documented significant discrepancies between recall and momentary reports. Therefore, we do not know how accurately people's recollections corresponded to the emotions they felt at the time of their special experiences.

Another limitation is associated with variation in the way questionnaires were distributed. Some people completed the instrument on site, while others took it and completed it later. This introduces several potential sources of variability, including the possibility that some respondents may have been primed to pay attention to their experiences and differences in the time elapsed between the experience and completion of the questionnaire. Nevertheless, different levels of emotion were systematically associated with different social and environmental factors, despite any noise introduced by these methodological differences.

The Dalton Highway is a unique recreational setting. It experiences very low visitation, it is vast and largely undeveloped (although the oil pipeline is clearly present), and has few recreational improvements. These factors undoubtedly colored the types of factors visitors described when narrating their extraordinary experiences. Additionally, people who plan vacations to this remote environment may be a self-selected group. Therefore our conclusions should not be generalized to other populations or settings without careful thought.

Finally, we were not able to obtain a random sample. In comparison to other studies that use small convenience samples of students (e.g., McIntyre & Roggenbuck, 1998) or self-selected participants (Fredrickson & Anderson, 1999), we were able to introduce a greater degree of representativeness and heterogeneity by approaching all visitors possible on sample days. Nevertheless, there may have been some unrecognized bias, for instance if people who did not need information tended not to stop at the visitor center.

Conclusions and Implications

As yet there has been relatively little research on the specific nature and causes of different emotions during recreation experiences. This study demonstrates that recreation and tourism can generate strong positive affect via extraordinary experiences and that different factors lead to different intensities of emotion. Moreover, many cognitive themes emerged in addition to emotion as part of special experiences, but these generally dealt with things other than prior expectations or of goal satisfaction. This supports Arnould and Price's (1993, p. 26) contention that it is "spontaneity that distinguishes extraordinary events from everyday routines and contributes to the perception of the event as extraordinary."

Our study paints a mixed picture for resource managers and tourism providers. On the one hand, the prevalence of high quality experiences and the positive emotions associated with them attest to the important social benefits provided by recreation and tourism. However, examining the specific factors that lead to positive experiences might cause managers to ques-

tion how much influence they have over people's extraordinary experiences. In many cases, special experiences emerged from serendipitous events or constellations of factors largely outside managerial control, such as ephemeral weather events, coming across a wolf stalking its prey, or seeing the midnight sun play across the landscape. Nevertheless, studies such as this can help strengthen the case for protecting places and conditions that foster positive outcomes, and understanding what factors promote beneficial outcomes can help recreation and tourism providers be alert to ways they can create or capitalize upon such conditions.

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